

PATENT

(Docket No. 12115)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

PETER FALKE ET AL

Serial No.: NEW

Filed: HEREWITH

For: PREPARATION OF LOW-ODOR
FLEXIBLE POLYURETHANE
FOAMS

Group Art Unit: NEW

Examiner: NEW

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Lori D. Hass

PRELIMINARY AMENDMENT

BOX PATENT APPLICATIONS

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

In reference to the above-referenced patent application, please enter the following
amendment and consider the accompanying remarks prior to examination thereof on the merits.

IN THE CLAIMS:

Please amend the claims as follows:

Please cancel claim 15.

1. (Amended) A process for the preparation of low-odor flexible polyurethane foams comprising reacting organic and/or modified organic polyisocyanates (a) with a polyetherol mixture (b) and, optionally, further compounds (c) having hydrogen atoms reactive toward isocyanates, in the presence of water and/or other blowing agents (d), catalysts (e), flameproofing agents (f) and, optionally, further assistants and additives (g), wherein the polyetherol mixture (b) comprises

b1) at least one difunctional to octafunctional polyetherol based on ethylene oxide and, optionally, propylene oxide and/or butylene oxide, having an ethylene oxide content of at least 30% by weight, based on the total amount of alkylene oxide used, and an OH number of from 20 to 200 mg KOH/g, and

b2) at least one polyetherol based on propylene oxide and/or butylene oxide and, optionally, ethylene oxide, having an OH number greater than 20 mg KOH/g, the ethylene oxide content being less than 30% by weight, based on the total amount of alkylene oxide used, wherein foaming is effected in an index range of less than 150, and the catalyst comprises at least one catalyst supporting the polyisocyanurate reaction.

3. (Amended) A process as claimed in claim 1, wherein the polyol (b1) has more than 30% of primary OH groups.

4. (Amended) A process as claimed in claim 1, wherein the polyol (b1) is used in amounts of at least 30% by weight, based on the total weight of the component (b).

5. (Amended) A process as claimed in claim 1, wherein the polyol (b2) is used in amounts of less than 70% by weight, based on the total weight of the component (b).
6. (Amended) A process as claimed in claim 1, wherein water is used as blowing agent (d) in amounts of from 1 to 10, preferably from 1 to 5, % by weight, based on the total weight of the components (b) to (g).
7. (Amended) A process as claimed in claim 1, wherein the catalyst (e) used is an alkali metal salt and/or alkaline earth metal salt.
8. (Amended) A process as claimed in claim 1, wherein the catalyst (e) used is potassium acetate.
9. (Amended) A process as claim in claim 1, wherein the flameproofing agents (f) are halogen-free.
10. (Amended) A process as claimed in claim 1, wherein the flameproofing agents (f) used are melamine and, optionally, expanded graphite.
11. (Amended) A process as claimed in claim 1, wherein the organic and/or modified organic polyisocyanates (a) comprise tolylene diisocyanate, mixtures of diphenylmethane diisocyanate isomers, mixtures of diphenylmethane diisocyanate and polyphenylpolymethylene polyisocyanate or tolylene diisocyanate with diphenylmethane diisocyanate and/or polyphenylpolymethylene polyisocyanate.
12. (Amended) A process as claimed in claim 1, wherein the organic and/or modified organic polyisocyanates (a) comprise NCO-containing prepolymers formed from the reaction of the isocyanates (a) with the polyetherols (b) and, optionally, components (c) and/or (d).
13. (Amended) A process as claimed in claim 1, wherein the foaming is effected in an index range of from 50 to 150.

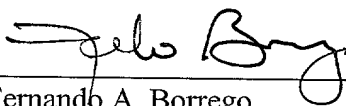
14. (Amended) A low-odor flexible polyurethane foam, which is prepared according to the process as claimed in any of claims 1 to 13.

REMARKS

Applicants respectfully request examination of the present application as amended herein. Claims 1, and 3-14 have been amended. Claim 15 has been canceled. Upon entry of the above preliminary amendment, claims 1-14 remain pending in the application. A marked-up version of the amended claims is attached hereto in Appendix A. Should the Examiner have any questions, please contact the undersigned attorney.

Respectfully submitted,

Date: 1/15/02


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APPENDIX A

1. (Amended) A process for the preparation of low-odor flexible polyurethane foams [by] comprising reacting organic and/or modified organic polyisocyanates (a) with a polyetherol mixture (b) and, [if required] optionally, further compounds (c) having hydrogen atoms reactive toward isocyanates, in the presence of water and/or other blowing agents (d), catalysts (e), flameproofing agents (f) and, [if required] optionally, further assistants and additives (g), wherein the polyetherol mixture (b) [consists of] comprises

b1) at least one difunctional to octafunctional polyetherol based on ethylene oxide and, [if required] optionally, propylene oxide and/or butylene oxide, having an ethylene oxide content of at least 30% by weight, based on the total amount of alkylene oxide used, and an OH number of from 20 to 200 mg KOH/g, and

b2) at least one polyetherol based on propylene oxide and/or butylene oxide and, [if required] optionally, ethylene oxide, having an OH number greater than 20 mg KOH/g, the ethylene oxide content being less than 30% by weight, based on the total amount of alkylene oxide used,

[and the] wherein foaming is effected in an index range of less than 150, and the catalyst [used comprising] comprises at least one catalyst supporting the polyisocyanurate reaction.

3. (Amended) A process as claimed in claim 1 [or 2], wherein the polyol (b1) has more than 30% of primary OH groups.

4. (Amended) A process as claimed in [any of claims 1 to 3] claim 1, wherein the polyol (b1) is used in amounts of at least 30% by weight, based on the total weight of the component (b).
5. (Amended) A process as claimed in [any of claims 1 to 4] claim 1, wherein the polyol (b2) is used in amounts of less than 70% by weight, based on the total weight of the component (b).
6. (Amended) A process as claimed in [any of claims 1 to 5] claim 1, wherein water is used as blowing agent (d) in amounts of from 1 to 10, preferably from 1 to 5, % by weight, based on the total weight of the components (b) to (g).
7. (Amended) A process as claimed in [any of claim 1 to 5] claim 1, wherein the catalyst (e) used is an alkali metal salt and/or alkaline earth metal salt.
8. (Amended) A process as claimed in [any of claims 1 to 5] claim 1, wherein the catalyst (e) used is potassium acetate.
9. (Amended) A process as claim in [any of claims 1 to 8] claim 1, wherein the flameproofing agents (f) are halogen-free.
10. (Amended) A process as claimed in [any of claims 1 to 9] claim 1, wherein the flameproofing agents (f) used are melamine and, [if required] optionally, expanded graphite.
11. (Amended) A process as claimed in [any of claims 1 to 10] claim 1, wherein the organic and/or modified organic polyisocyanates (a) [used are] comprise tolylene diisocyanate, mixtures of diphenylmethane diisocyanate isomers, mixtures of diphenylmethane diisocyanate and polyphenylpolymethylene polyisocyanate or

tolylene diisocyanate with diphenylmethane diisocyanate and/or
polyphenylpolymethylene polyisocyanate.

12. (Amended) A process as claimed in [any of claims 1 to 10] claim 1, wherein the organic and/or modified organic polyisocyanates (a) [used are] comprise NCO-containing prepolymers formed from the reaction of the isocyanates (a) with the polyetherols (b) and, [if required] optionally, components (c) and/or (d).
13. (Amended) A process as claimed in [any of claims 1 to 12] claim 1, wherein the foaming is effected in an index range of from 50 to 150.
14. (Amended) A low-odor flexible polyurethane foam, which [can be] is prepared according to the process as claimed in any of claims 1 to 13.